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| EXAMINER | |
|---|---|
| CHOUDHURY, AZIZUL Q | |

| ART UNIT | PAPER NUMBER |
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| 2145 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/772,709 | AOYAGI ET AL. | |
| | Examiner | Art Unit | |
| | AZIZUL CHOUDHURY | 2145 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *2-5,7-15,17 and 35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-5, 7-15, 17 and 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Detailed Action***

This office action is in response to the amendment received on December 27, 2007.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-5, 7-15, 17 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over George et al (US Pat No: 5,774,669) in view of Kracht (US Pat No: 6,377,987), hereafter referred to as George and Kracht, respectively.

1. With regards to claims 2, 17 and 35, George teaches through Kracht a method (a system is a method) of automatically recognizing a network configuration, for automatically recognizing a device configuration on a network system having a network node including at least one or more intelligent network devices each implementing network devices each implementing an SNMP agent and a management information base (column 5, lines 41-42, George), the method comprising:
    a. A first step of sending an ICMP echo request from an administrator terminal to individual network devices in the network node, and detecting existence and non-existence of network devices on the basis of responses

therefrom (George's design allows for SNMP and ICMP (column 4, lines 54-56, George). There are SNMP agents for all the nodes (see column 6, lines 20-23, George). Plus, if desired the design allows for ICMP (column 4, lines 54-56, George). In addition, the design allows for polling (echo requests) (column 5, line 20, George)); and

b. A second step of creating plural SNMP messages, each of the SNMP messages inquiring whether or not the network devices support a management information base included in each of the SNMP messages (column 7, lines 25-46, Kracht), sending the plural SNMP messages one by one to the SNMP agents (inherent feature in SNMP) in network devices of which existence was detected in the first step (George's design allows for both SNMP and ICMP (see column 4, lines 54-56, George). There are SNMP agents for all the nodes (see column 6, lines 20-23, George) if the user wishes to use SNMP. In addition, if ICMP is desired, it is available. Both protocols allow for device detection. ICMP achieves it through polling and if the device is "up" (exists) it replies back), and detecting the types of the network devices in the network node based on the information of success and failure of sending an receiving the plural SNMP messages based on combinations of information stored in management information bases included in the received SNMP messages, wherein the combination of the information stored in the management information bases included in the received SNMP messages indicates the types of the individual

network devices and roles of the individual network devices in the network node (column 4, lines 30-40 and column 7, lines 25-67, Kracht);

c. A third step of acquiring a set of physical addresses of network devices connected to ports of a network device from the management information base of the network device, the network device being a type of device to have a bridge function (column 15, lines 13-14, George);

d. A fourth step of acquiring information as to physical-IP address correspondence from the management information base of a network device having a routing function (column 10, lines 39-40, George); and

e. A fifth step of recognizing at an IP level the network devices connected to the ports of the network device having a bridge function, based on the acquired information as to physical-IP address correspondence (column 18, line 29, George)

(While George teaches a network management system that allows for ICMP echo and SNMP managers, George's teachings do not specifically cite the SNMP requests yielding device type information. In the same field of endeavor, Kracht teaches a network management system that allows for device type to be received from an SNMP request. It would have been obvious to one skilled in the art, during the time of the invention, to have combined the teachings of George with those of Kracht, to provide a network management system that discovers a plurality of devices that are located in the network (column 3, lines 50-67, Kracht)).

2. With regards to claim 3, George teaches the method of automatically recognizing a network configuration, further comprising a sixth step of: recognizing that network devices from which a response to the ICMP echo request is returned are active and network devices from which no responses is returned are non-existent; and referring to the information as to physical-IP address correspondence acquired in the fourth step, and if there is correspondence information of any network device other than those recognized to be active, recognizing this network device to be inactive (George's design (as all network monitoring designs) allows for network device activity information as claimed (column 3, lines 50-54; column 4, lines 29-30; column 14, lines 22-43; column 18, line 29; George)).

3. With regards to claim 4, George teaches the method of automatically recognizing a network configuration, further comprising the step of checking the management information base of a network device having a bridge function or a repeater function for stored information on inactive network devices connected to ports of the network device, and if any, detecting connections of the inactive network devices based on the stored information (Bridges and repeaters are network devices and are considered nodes. They are checked by George's design (column 18, lines 26-44, George)).

4. With regards to claim 5, George teaches the method of automatically recognizing a network configuration, further comprising the step of detecting the presence of a plurality of network devices having a bridge function, based on the contents of the management information bases of the network devices acquired at the second step, and if the presence of a plurality of them is detected, then detecting whether one of the network devices having a bridge function is connected to a particular port of a parent device with one of the other network devices having a bridge function as the parent device, and if any, then retrieving a device configuration of each connection destination of a child device with that network device as the child device, thereby recognizing port-to-port connections between the network devices having a bridge function (George's design not only allows for the retrieval of information about bridges but related information such as addresses and interfaces (hence what is attached to it) (column 18, lines 26-44, George). In addition, George discloses that a hierarchical view is produced in the design, hence all the connections between devices is obtained in George's design (column 4, lines 13-29, George). Furthermore, the design allows for the detection of neighboring nodes (column 3, lines 50-54, George)).

5. With regards to claim 7, George teaches the method of automatically recognizing a network configuration, comprising the step of, in the cases where the presence of a plurality of devices is detected between the parent device and the child device, detecting whether these devices each have any of a routing function, a

bridge function, and a repeater function, and if none, then predicting the presence of non-intelligent packet relay equipment (George's design allows for a node to be detected and determined if it is a host or a router or bridge or any other device (column 18, lines 26-44, George)).

6. With regards to claim 8, George teaches the method of automatically recognizing a network configuration, comprising the step of checking physical addresses stored in the management information bases of the parent and child devices recognized of connection, and when the physical address of the child device is not stored in the management information base of the parent device or when the physical address of the parent device is not stored in the management information base of the child device, selecting such an arbitrary device as commonly included in the sets of physical addresses of the devices connected to particular ports of the parent and child devices so that the recognition of connection between the parent and child devices is narrowed based on the connection ports of the parent and child devices to the device selected (George's design has agents at each device. In addition, the addresses of the devices are detected as claimed (column 18, lines 26-44, George)).

7. With regards to claim 9, George teaches the method of automatically recognizing a network configuration, comprising the steps of: acquiring the value of update frequency of the source physical address of a latest received frame in an

arbitrary port of a network device having a repeater function, so as to recognize the number of active devices connected to that arbitrary port from the value; and, unless the value of update frequency is "0" or "1," acquiring the value of the source physical address of a latest received frame in the arbitrary port at regular time intervals, so as to recognize the physical addresses of all the network devices connected to that arbitrary port (As stated earlier, George's design allows for network devices such as bridges to be detected (column 18, lines 25-44, George). In addition, George's design allows for devices' availability to be recognized (active or non-active) (column 14, lines 22-43, George). It is inherent that flags (the use of "1" or "0") are used in the code to enable such a feature).

8. With regards to claim 10, George teaches the method of automatically recognizing a network configuration, further comprising the step of acquiring the value of update frequency of the source physical address of a latest received frame in an arbitrary port of a network device having a repeater function at regular time intervals, and checking for a change in the value to recognize whether the network device has a repeater function (In George's design (as with most network monitors), means for automatic updates are present (column 11, lines 1-20, George)).

9. With regards to claim 11, George teaches the method of automatically recognizing a network configuration, further comprising the step of temporarily

locking out an arbitrary port of a network device having a bridge function and a network device having a repeater function by using the administrator terminal, and if a network device whose connection cannot be recognized on the basis of information stored in the management information bases of the network device having a bridge function and the network device having a repeater function responds to an ICMP echo request packet before the lockout but no longer responds after the lockout, recognizing this device to be connected to the arbitrary port (George's design has system administrators that after evaluations of the network status determine information about the network and trouble areas (column 5, lines 1-7, George)).

10. With regards to claim 12, George teaches the method of automatically recognizing a network configuration, comprising the step of collecting port-by-port statistics as to send/receive frames of a network device having a bridge function and a network device having a repeater function at regular time intervals, and if network devices whose connections cannot be recognized on the basis of information stored in the management information bases of the network device having a bridge function and the network device having a repeater function have a pair of ports to fall within a range of values of the statistics arbitrarily set by port, recognizing this pair of ports to be in connection (George's design allows for statistics to be taken of the network devices and monitor the devices sessions (connections) (column 5, lines 22-34, George)).

11. With regards to claim 13, George teaches the method of automatically recognizing a network configuration, comprising the step of collecting information stored in the management information bases of the active network devices at regular time intervals, storing the same into a storage area on the administrator terminal, and comparing previously collected content and the currently collected contents for a difference to detect activation, suspension, modification of connection, destination, modification of IP address, and the like of the active network devices (George's design allows administrators to collect network data and save them so that trouble in the network may be detected (column 5, lines 1-17, George)).

12. With regards to claim 14, George teaches the method of automatically recognizing a network configuration, comprising the step of creating a model table of connections between devices on the basis of information as to connections between network devices, and referring to the model table to detect connection between network devices by each model of the connection between devices or by combining a plurality of models of the connections between devices (George's design has routing tables (column 3, lines 45-63, George). Other tables are also available (column 11, lines 52-65, George)).

13. With regards to claim 15, George teaches the method of automatically recognizing a network configuration comprising the step of expanding a recognized network configuration into logical chart data, creating chart data including a physical device configuration arranged on physical floor map or the like, and displaying at least one set of chart data on a display screen (George's design has hierarchical views of the network (column 4, lines 13-29, George)).

14. The motivation applied to claims 2, 17 and 35 are applicable to claims 3-5 and 7-15.

***Response to Remarks***

The amendment received on December 27, 2007 has been carefully examined but is not deemed fully persuasive. The following are the examiner's response to the arguments presented within the amendment.

Within the latest amendment, all the independent claims have been amended to now teach that SNMP messages are sent to devices which were detected as being "existing" within the first step. In the first step, the detecting was performed through ICMP. The applicant contends that George only teaches SNMP or ICMP, not both. The examiner disagrees. George teaches that SNMP or ICMP can be used but provides for both; see column 4, lines 54-56, George. There are SNMP agents for all the nodes (see column 6, lines 20-23, George) if the user wishes to use SNMP. In addition, if ICMP is desired, it is available. Both protocols allow for device detection. ICMP

achieves it through polling and if the device is "up" (exists) it replies back. Hence, ICMP can be applied to detect the existence of a device as claimed within the first step and SNMP agents exist within George as well to transmit messages with as claimed within the second step.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AZIZUL CHOUDHURY whose telephone number is (571)272-3909. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C./
Examiner, Art Unit 2145

/Jason D Cardone/
Supervisory Patent Examiner, Art Unit 2145